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(54) **Protection circuit for a switched mode power supply**

(57) The protection circuit comprises a clamping circuit (CL) with a switching element (T21) for reducing a supply voltage (Vcc) in case of a failure, especially in case of an overvoltage condition, and a holding circuit (HO) for providing a holding current for said clamping circuit. With the holding current the switch-off time in case of a failure is extended which avoids therefore an immediate start-up of the power supply when the supply voltage (Vcc) is reduced, and which would lead to a hiccup stage.

The clamping circuit (CL) comprises advantageously a threshold circuit D24, R38), which provides a switching voltage (Ue) for the switching element (T21) when the supply voltage (Vcc) reaches an upper voltage limit. The switching element is connected to a charge capacitor (C25) which provides the switching-on voltage for the switching transistor (T20), and by reducing this supply voltage the switching of the switching transistor is disabled. The holding circuit (HO) comprises in particular a capacitor (C37) which is coupled via a resistor (R37) to the clamping circuit (CL), especially to the threshold circuit D24, R38), for providing an additional current also in a failure mode. In a special embodiment the capacitor (C37) of the holding circuit (HO) is connected via a rectifying element (D37) to an auxiliary winding (W2) of the transformer.

The protection circuit may be used especially for a

switched mode power supply comprising a transformer with a primary winding (W1) and an auxiliary winding (W2), and a switching transistor (T20) which is coupled to said primary winding and which is operating in a flyback mode.

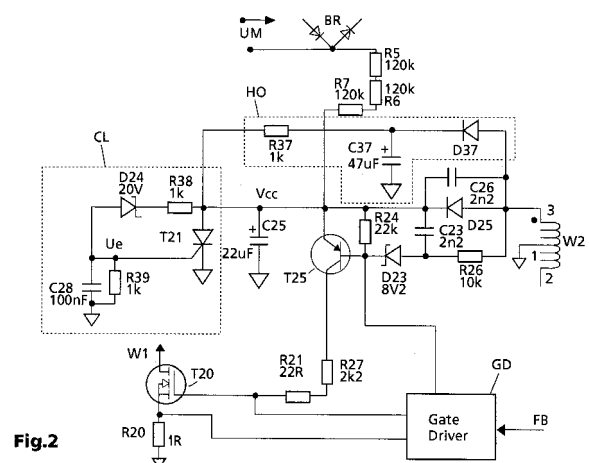


Fig.2



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Application Number
EP 01 10 3936

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 23 April 2009	Examiner Wilhelm, Gunther
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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